

In the Specification

Please delete the text extending between page 4, line 14 and page 5, line 27, and substitute therefor the following text:

The technology detailed herein addresses some of the difficulties identified in the prior art.

As detailed more fully below, an exemplary method for inserting data into digital media data may include:

- segmenting the digital media data into data blocks;
- applying a pseudo-random reversible function to a block of the digital media data to obtain a modified data block;
- applying an orthogonal transform on the modified data block to obtain transform domain data;
- modifying at least one selected transform domain data coefficient in accordance with identification or authentication data;
- inverse transforming the transform domain data having the at least one modified coefficient; and
- applying an inverse pseudo-random function to obtain watermarked digital media data.

The pseudo-random reversible function preferably has the property of flattening the power spectral density of the data block (i.e., the function performs a spectral whitening operation), such that each coefficient then generated by the transform contributes substantially equally to the total energy of the block. This allows the watermarking process to be less sensitive, with regard to introduced distortion, to the selection of the transform coefficient which is modified in the watermark insertion operation.

As detailed more fully below, an exemplary method for extracting data from watermarked digital media may include:

- segmenting the digital media data into data blocks;
- applying a pseudo-random reversible function to a block of the digital media data to obtain a modified data block;
- applying an orthogonal transform to the modified data block to obtain transform domain data; and
- extracting identification or authentication data from at least one coefficient of the transform domain data.

Please delete the text extending between lines 12-24 of page 7.

Please delete the text extending between lines 11-12 of page 8, and substitute therefor the following text:

A great variety of other arrangements and improvements are also detailed. Certain embodiments detailed below have one or more of the following advantages:

1. the presence of the watermark is invisible (i.e., the watermarked visual or audio material is visually or auditorily substantially indistinguishable from the original);
2. the watermark is robust to signal manipulation and distortion;
3. the watermark is secure;
4. the original media data is not required in order to extract the watermark;
5. the watermark can be inserted and/or extracted by a simple computational procedure which can be done in real time.

The foregoing, and additional features and advantages of our technology will be more readily apparent – by way of example only - from the following detailed description, which proceeds with reference to the accompanying drawings.

Brief Description of the Drawings

Please delete the text extending between lines 24-29 of page 8, and substitute therefor the following text:

Detailed Description

The technology detailed herein relates to the insertion and extraction of identification or authentication data for use as a watermark in digital media data, such as digital image data, still or sequential, digital audio data or the like. A watermark provided in digital media data may provide a means for identification of the source or some other attribute of the media data as may be required to prove copyright ownership, for example. As mentioned above, embodiments detailed herein may have a number of advantageous properties, including: